

## **APPENDICES**

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### Appendix A. 2007-2008 Timeline of Activities

January 2007	Third party compliance inspections begin—all sites to be inspected. Meet with AON to plan transfer of Chapter 134 Part C rule. Submittal of proposed legislation to implement UST provisions of federal Energy Policy Act, transfer management of UST installer licensing to DNR from UST Fund Board.
February	Secondary Containment Rule Development. Meeting with all Field Offices. PMCI Expo and presentation.
March	Tank management tags sent out. National Tanks Conference Presentations in San Antonio, TX
April	Delivery prohibition rules development. EPA All States Meeting; ASTWMO Meeting, Providence, RI
May	Second Meeting with AON. Second draft of delivery prohibition rules. Legislation (modification to 455B.474) is adopted & signed by Governor.
June	Newly revised inspection guidance
July	Second letter requiring inspection goes out. Third inspector training class. Final preparations for STI CP training. Meeting with all DNR Field Offices. EPC meeting – emergency adoption of installer licensing rules, notice on secondary containment and delivery prohibition.
August	Secondary Containment Statute effective; STI CP Class held at Botanical Center. Public hearings on rules.
September	RFP prepared for formal training and licensing of compliance inspectors. EPA Program Review
October	Final letter requiring inspection goes out. ATSWMO Meeting. EPC final approval of secondary containment /delivery prohibition rules
November	Delivery Prohibition rules effective. Meeting with DNR Field Offices.
December	UST audit and inspection preparation
January 2008	Tank management tags sent out
February	RFP reviewed and awarded to Marcel Moreau; NACE certification. ESD reorganization - UST Section becomes part of Land Quality Bureau. PMCI Expo and presentation.
March	National Tanks Conference Presentations in Atlanta, GA
April	EPA All-States Meeting; NESHAP rule development; Chapter 134 rule development; IPECA meeting
May	Revision of Forms for NESHAP requirements. Plan for inspector training and Refresher Course. Targeted enforcement plan (non-inspected sites)
June	NESHAP rule development; EPA Conference call regarding Flooding; emergency flood policy issued. Completed new closure guidance document.
July	Revision of 567—Chapter 134 Part C; ethanol presentation
August	Inspector training and licensing and refresher course presented; licenses renewed for 2008. Summary letter to o/o regarding results of inspections.
September	Owner/Operator rule development and Chapter 135 rule revisions prepared; PEI Trade Show in Chicago, IL
October	Stakeholder meeting. Field office meeting. Installer training hosted by Seneca; Marcel Moreau as trainer.
November	Stakeholder meeting; tank management tags sent out. EPA program review – enforcement/third party program. Completed EPA survey.
December	Chapter 567—134 C presented as information item. Prepare Installer Class. EPA telecon – preparation for spring UST inspections by EPA. Installer training hosted by PMMIC; DNR presentation.

### Appendix A (continued). 2009 Timeline of Projected Activities

January 2009	First notice to o/o regarding 2009 inspection requirement. Memo to inspectors regarding 2009 inspections. Complete first draft of owner/operator rules and Chapter 135 revisions. Revise Chapter 134 Parts A & B to reflect duty to report requirements in 134 Part C. Meeting with FOs.
February	Hold stakeholder meeting for owner/operator rules and Chapter 135 revisions. NACE certification. Chapter 134 rules as NOIA to EPC. NACE Certification. Installer Course.
March	Present o/o rules to EPC. EPA UST inspections to begin (continue through July)
April	New UST/LUST website complete
May	
June	Second letter reminding owners/operators about an inspection
July	Approve owner/operator rules and Chapter 135 revisions
August	
September	
October	Final letter to owner/operators. Tank tag management fee preparation
November	
December	

**Appendix B**  
**Memo to Owner Operators Regarding 2007 UST Inspections**

Date: 9 January 2007  
From: Elaine Douskey, UST Section Supervisor  
To: Iowa Underground Storage Tank (UST) owners/operators  
Re: UST Compliance Inspections and Permanent Tank Management Tags

The DNR has adopted new rules requiring owners and operators to contract with a certified compliance inspector to inspect regulated UST systems (active and temporarily closed) at least once every two years [Chapter 567—135.20]. The inspections conducted by the certified compliance inspectors won't be that different from the inspections DNR had been doing (physical inspection of the facility and review of records). The DNR field office staff will audit about 10 percent of the compliance inspections to ensure they are conducted properly.

The DNR has conducted two training courses for compliance inspectors. A list of certified compliance inspectors is attached. Updates to this list will be available on the DNR's compliance inspection website: <http://www.iowadnr.com/land/ust/documents/InspectorList.pdf>. Certified compliance inspectors are first of all Iowa licensed installers or inspectors who are trained, experienced and knowledgeable about your UST system. They were then trained and certified by the DNR to conduct a compliance inspection.

All UST systems must be inspected initially by **December 31<sup>st</sup> 2007**. Don't wait until the last minute to have your system inspected. After the initial inspection, inspections will be required on a biennial basis (every two years).

If you have UST insurance with Petroleum Marketers Management Insurance Company (PMMIC), you recently were asked to sign a release form to allow the PMMIC inspection results to be reported to the DNR as a compliance inspection. If you did not sign or receive a release form and want your PMMIC inspection to count as a compliance inspection, contact PMMIC and ask for a copy of the release form. If you do not sign a release, PMMIC will not be able to submit the compliance inspection to the DNR and you will have to contract separately for a compliance inspection. Inspection requirements are the same for PMMIC and non-PMMIC insured sites except owners/operators with PMMIC insurance will not have to contact a compliance inspector to initiate the inspection.

Here's how the inspection process works: the owner contacts a certified compliance inspector to schedule a compliance inspection before December 31<sup>st</sup> 2007. After the inspection is scheduled, the inspector will inform the DNR Tank Section of the date of the inspection. The Tank Section will then inform the field office of the inspection in case the field office wants to conduct a co-inspection or an audit. After your site is inspected, and no violations/deficiencies are recorded, the compliance inspector must submit a final report within 10 days of the inspection.

If a violation/deficiency is identified, you have 60 days to resolve it. The Inspector must submit a final inspection report documenting rule violations and deficiencies after the violations/deficiencies are resolved. If it's not resolved in 60 days, the matter will be referred to DNR field office for further enforcement. We expect all matters to be resolved well within 60 days of the inspection. Fixing the violation within 60 days does not necessarily

protect you from enforcement action, which may include the assessment of penalties (depending on the type and severity of the violation and the history of past violations). However, compliance within 60 days will be a beneficial factor the Department will take into account.

Remember to have all the records for the inspection available when the compliance inspector arrives—you will be informed about what to have available when you schedule the inspection—it will save you and the inspector time and money. A follow-up inspection may be required if the records are not available or if the records are unorganized or if violations or deficiencies are not satisfactorily resolved.

If you choose, you may allow the compliance inspector to resolve a violation/deficiency at the time of the inspection if it is possible. It may save you mobilization charges if it can be taken care of immediately. The inspector must still report it, but it will show on the report as resolved. If a leak or release is identified, the inspector will report it on the inspection report and ask you, the owner/operator to report it to the DNR immediately.

We will continue to use our field office staff to investigate complaints, tank closures, contaminated sites where corrective action or remediation systems are ongoing, problem sites where there is a history of non-compliance and sites where groundwater is especially vulnerable. They will also conduct enforcement and work requests from the Tank Section.

#### **Permanent Tank Tags**

Recently you received your tank management tag application. Upon returning the application with your payment you will receive a permanent tank tag ID, which will appear different from the tags you received in the past. Next year you will receive a smaller renewal tag that will also be placed on the fill port in addition to the permanent tag.

Currently, the tank tag you have has a sequential number that has no significance for our database. This year, through compliance inspections, we will record the ID associated with each tank or compartment. The permanent tag will allow us to track specific tank information. When you receive your permanent tank tag, please place it on the fill port immediately so the compliance inspector can record a number with the tank/compartment.

**Appendix C**  
**Memo to Owner Operators Regarding 2009 UST Inspections**

**UST Compliance Inspections Due in 2009**

Date: 12 January 2009  
To: Iowa Underground Storage Tank (UST) Owners/Operators  
From: Elaine Douskey, UST Section Supervisor, Iowa DNR

Third party compliance inspections of regulated UST systems are required every two years [Chapter 567—135.20]. The first cycle of biennial inspections was 2007. It is time now for the second cycle of inspections.

All regulated UST systems (active and temporarily closed) must be inspected in 2009 by an Iowa licensed compliance inspector. **If you do not have a compliance inspection completed by December 31, 2009, you will be subject to fuel delivery prohibition (no fuel deliveries until an inspection is completed) together with a fine.**

Please do not wait until November 2009 to schedule your compliance inspection when snow and ice have to be removed from the manways and scheduling is difficult. A list of certified Iowa compliance inspectors is included with this memo. The list is also available on our website: <http://www.iowadnr.gov/land/ust/ustprofindex.html>.

If you have UST insurance with Petroleum Marketers Management Insurance Company (PMMIC), you do not need to schedule an inspection. Rounds & Associates will schedule and conduct the compliance inspection and submit the report to the DNR.

The inspection process will be the same as it was in 2007. Additional requirements the inspectors will be looking for are secondary containment at UST systems installed after August 1, 2007 and National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements for sites that have a gasoline throughput greater than 10,000 gallons per month. If you are unaware of NESHAP or secondary containment requirements and want to know more, contact your compliance inspector or installer.

### **Inspection of Records**

As part of the inspection process, the inspector will ask you to submit 12 months of leak detection monitoring records for your UST system (tanks and piping). As part of the NESHAP inspection, the inspector will also ask you to provide an estimated monthly throughput of gasoline and ethanol blends at the facility. Do not include diesel or kerosene.

A list of required records is included with this memo. Submit these records to the inspector before the inspection. Your inspector will be able to conduct the inspection more efficiently if you organize and submit your records for his review before the on-site visit.

### **On-Site Inspection**

After you submit your records, the inspector will conduct the physical inspection of your UST facility to determine if there are any violations or deficiencies to resolve and whether a follow-up visit is required. Unless there are

serious violations, or you fail to send the required information or fail to resolve the problem or deficiency, a follow-up visit should not be necessary.

If there are no violations or deficiencies, the inspector will submit a final report to the owner/operator and the DNR within 10 days of the inspection.

## **Violations or Deficiencies**

If a violation or deficiency is identified:

- You have 60 days to resolve the problem.
- The inspector must submit a final inspection report to the DNR within 90 days of the inspection.
- If a violation or deficiency is not resolved in 60 days, the matter will be referred to a DNR field office for further enforcement.

Even if the problem is resolved at the time of the inspection, the inspector must still report the violation, but it will show on the report as resolved. If a leak or release is identified during the inspection, the inspector will note it on the inspection report and ask you, the owner/operator, to report it to the DNR immediately.

DNR Field Office staff will continue to audit the compliance inspectors to ensure they are conducting thorough regulatory inspections.

## **Appendix D**

### **UST System Record Keeping Requirements**

In order to better prepare for the next inspection of your UST system, **please check the list below for the tank and piping leak detection methods you use.** Submit the appropriate records to your compliance inspector. Do not send the original records--copies only, please. These records are required by the DNR for regulatory compliance:

#### **1. Leak detection requirements for each tank:**

- a. **Automatic Tank Gauging System (ATG).** Submit one passing test printout for each month. Make sure the test you save for the month is shortly after a delivery or when the product level is at its highest for the month. The product level will show up on either your leak test or inventory report. Use the test with the highest level of product.

The correct third party certification for your ATG system should be available on site, and should have been provided by your ATG system installer. If not, go to the National Work Group on Leak Detection Evaluations (NWGLDE) to print a copy of your equipment's evaluation (<http://nwglde.org/>).

- b. **SIR.** Submit the last 12 months of individual monthly tests. You may also submit the annual report; but unless you submit each month's report along with it, the SIR is invalid.
- c. **Interstitial Monitoring or Secondary Containment.** Submit the last 12 months of recorded visual inspections (log of monthly entries) or the last 12 months of reports from your automated system.
- d. **Vapor or Groundwater Monitoring.** Submit results of the last 12 months of monitoring. Make sure you identify the monitoring device used, and how you identify a release has occurred.
- e. **Daily Inventory Control and Tank Tightness Testing.** In order to use this method, your tanks cannot be older than 10 years. Submit your records for each month for the last 12 months and results of the last precision (0.1 gph) tank test which is required every five years. After 10 years, you cannot continue with this combination method of leak detection monitoring and must switch to one of the other approved methods.

After the 10 years, you are encouraged to continue to use daily inventory control and monthly reconciliation as a secondary method of leak detection.

#### **2. Leak detection requirements for pressurized piping.**

- a. **Electronic Line Leak Detector (ELLD).** Submit one passing line leak detection printout for each of the last 12 months showing either a 0.2 or 0.1 gph leak rate. Also, submit the last annual function test of your electronic line leak detector (if required by the manufacturer). You do not need to conduct an annual line tightness test if you are using a monthly monitoring method such as this.
- b. **Mechanical Line Leak Detector (MLLD).** Submit the last **annual function test** of the line leak detector (a test that assures the MLLD can detect such a leak) and your most recent **line tightness test** (0.1 gph). Your MLLD must be capable of detecting a leak of 3 gph at 10 pounds per square inch line pressure within one hour.



- c. **Interstitial Monitoring.** Submit log of visual inspections for each month or monthly reports from your automated system.
- d. **Vapor or Groundwater Monitoring.** same as “c” above
- 3. **Leak detection requirements for suction piping.**
  - a. **Suction piping** requires a tightness test (0.1 gph) of the product line every three years. Submit the most recent line tightness test (within the last three years).
- 4. **Cathodic protection records for steel tanks and piping.** (Fiberglass or composite tanks do not need cathodic protection.)
  - a. Submit the last two cathodic protection test results. Cathodic protection testing is required every three years.
  - b. If you have an impressed current system (rectifier), submit the 60-day log of your inspection of the rectifier. The DNR recommends you inspect your rectifier every 30 days for proper operation.
- 5. **Inspection of Lined Tanks.** Submit the most recent internal inspection results. Lining inspections are required 10 years after tanks were lined and every 5 years thereafter. Internal periodic inspections are waived if cathodic protection was added within a year of the lining or if an internal integrity assessment of the tank was completed before adding cathodic protection to your tank.
- 6. **Submit records of any repairs to your UST system since the last inspection** e.g., repairs to your cathodic protection system, tanks or lines. Also, submit a copy of the 148 form if new equipment or installations have taken place.
- 7. **Make sure your insurance certificate is current.** The certificate is renewed annually. Include a copy of the certificate along with the other records above.
- 8. **If your UST site is temporarily closed, submit a copy of the temporary closure form.**
- 9. **Make sure your permanent tags (purple) and annual tags are attached to the fill ports of your tanks.** All regulated, registered tanks over 1,100 gallons should have two tags – the purple permanent tag and the annual renewal tag. **Permanent tags (purple) must remain on the fill ports for the life of the tanks.** Annual renewal tags are issued and replaced every year. The exception is temporarily closed tanks which do not received annual tags. The annual renewal tags will be a different color than the permanent tag, and a different color from year to year (e.g., green in 2008, yellow in 2009).

**Please do not submit originals of the above records--copies only.** Keep the original records on site, and send the compliance inspector copies of the originals. Also keep in mind DNR field personnel occasionally may be conducting follow-up inspections and will need access to your records as well; this is another reason for not sending your original copies. Please arrange the records (leak detection) in chronological order. No more than one test per month is required. Any results of “Fail” for leak tests should have been reported to the DNR, but include those with the copies of the records submitted to the compliance inspector.

## Appendix E

### UST Section/Field Office Third Party Inspection Audit Policy

1. **Notice of Compliance Inspection.** Compliance inspectors will notify the UST Section at least 10 days before a scheduled inspection. The compliance inspector enters the date of inspection in the inspection database. The database notifies the UST Section and the field office in the region where the inspection will take place.
2. **Types of Compliance Inspector Audits.** The field office will attempt to conduct an audit of a compliance inspector within thirty days of an initial compliance inspection (a facility may or may not be in compliance at this point). Some audits will be performed within ten days of the inspection and will be blind audits (without knowledge of the compliance inspection report). Some audits will be performed after the compliance inspection with knowledge of the inspection results (informed audit) and before or after the facility has come into compliance.

The administrative rules require a final compliance inspection report—if there are violations to correct—to be entered into the database and submitted to the owner/operator within 90 days of the inspection. Inspectors are required to notify the DNR (database entry) of their intention to conduct an inspection at least 10 days prior to the compliance inspection. If violations are not discovered during the compliance inspection, the results of the inspection are due to the owner/operator and DNR within 10 days. Owners and operators have 60 days to make corrections. Within 10 days of receipt of documentation for all corrections, the compliance inspector must submit the final report to the owner/operator and to the DNR. In some cases, there may not be a final report available for 90 days which could affect when a field office becomes aware of a compliance inspection.

3. **Co-inspections.** Each new compliance inspector must arrange for at least one co-inspection. New compliance inspectors are instructed to contact the field office in the region where their first inspection is scheduled. No more than one co-inspection should be necessary. In other words, it is not necessary for each field office to conduct a co-inspection of each new inspector. Co-inspections are necessary in order for new compliance inspectors to better understand the procedures, to ask questions and to ensure a thorough inspection. The field office will determine if an additional co-inspection is required. In the proceeding years, one co-inspection with each inspector should be conducted each inspection cycle. The field office will indicate in the compliance inspection database that the inspection type is *Co-inspection* (under *Inspection Type*, dropdown menu) The UST Section will track co-inspections for all compliance inspectors and assign co-inspections to field offices as deemed necessary.

- 4. Compliance Inspection Reporting.** If a final compliance inspection report has not been completed within 90 days after a facility inspection by a compliance inspector, the UST Section will send a letter to the respective compliance inspector requesting a final report within 14 days. If a final report is not received within 14 days, the UST Section will send a deficiency letter to the compliance inspector. The UST Section will provide facility information to the field office for a follow-up inspection to determine facility compliance.
- 5. Follow-up Facility Enforcement.** If the final compliance inspection report indicates non-compliance, the UST Section will provide this information to the field office. Follow-up enforcement will be provided by the field office. The field office should conduct an investigation as soon as practicable to confirm the violation(s). The field office can use the UST System Summary Report Form (or its equivalent) or a letter to record observations. This will be submitted to the owner/operator upon completion of the enforcement follow-up investigation and entered in the inspection database. The field office Notice of Violation should have a much shorter compliance deadline than the original 60-day deadline. If the facility fails to meet the deadline, the field office refers the matter to the DNR Legal Service Section in accordance with field office enforcement priorities. The matter is then tracked by the UST Section and Legal Service Section.
- 6. Compliance Inspector Audit--Comparing Inspection Results.** A compliance inspector audit by the field office is analogous to a routine compliance inspection and includes a comparison of field office and compliance inspection results. The field office physically inspects the tank system and reviews UST records. The owner/operator is asked about what records the compliance inspector asked for and what was actually provided to the inspector. The field office audit inspection results are compared with the compliance inspection results. If there is a discrepancy between the two results, (e.g., a violation is noted during the field office inspection that wasn't in the compliance inspector's report, or a violation is found by the compliance inspector, but not included in his report), the field office contacts the compliance inspector to resolve the disagreement. If the disagreement is not resolved, the field office provides the information to the UST Section. The field office and UST Section discuss what further action will be taken, if any, against the compliance inspector. Unless otherwise agreed, only the UST Section will send a notice of deficiency letter to the compliance inspector.
- 7. Abbreviated Audits.** An abbreviated audit is conducted when it is not possible, due to limited time or resources, to review every document or record and physically inspect every manway and remove all dispenser covers. The auditor chooses the extent to which documentation should be reviewed and what is physically inspected. The auditor must ask the owner/operator which records were requested by the compliance inspector and

what was actually sent or given to the inspector. The auditor must manage any uncertainty by sampling a representative number of documented results, such as monthly monitoring or periodic testing. The physical audit should, at minimum, verify the non-compliance or that it was resolved. Abbreviated audits will target the most likely leak sources at UST sites, including sumps, spill buckets, flex connectors, LLDs and dispensers.

- 8. Audit Inspection Report.** After the field office conducts an audit inspection, a report (UST System Summary Report Form or its equivalent) or a letter is submitted to the facility owner/operator and the compliance inspector to document the audit results. If necessary, the letter will include a notice of violation for non-compliance issues discovered at the facility. The report will include a statement about whether the auditor is in agreement with the compliance inspector's findings (inspection). If the auditor is not in agreement with the compliance inspector, the statement of disagreement shall be made only after consultation with compliance inspector and the UST Section.
- 9. Facility Records Review.** The audit inspection by the field office will include a review of the same records as those provided to the compliance inspector (except for an abbreviated audit). If the records reviewed by the compliance inspector cannot be determined or if there remains an uncomfortable level of uncertainty after reviewing a representative sample of documents/records, the matter should be referred to the UST Section. The UST Section will then conduct a records audit of this inspector or the inspector's company within six months to determine inspector compliance. The audit will include, but will not be limited to, records for the facility in question.
- 10. Contacting/Informing the Owner/Operator.** During the audit inspection, the field office should inform the owner/operator of the reason for the audit. It should be made clear to the owner/operator that the purpose of the audit is to review the work of the compliance inspector and to ensure that compliance requirements have been met.
- 11. DNR Audit Goal.** The goal of the DNR is to audit 10% of the registered tank sites during each calendar year, with the goal of visiting each UST site at least once every ten years.
- 12. Records of Audits** The auditor will enter audit information into the UST inspection database (*Inspection Type*, dropdown menu) and maintain a printed copy of the report/correspondence (e.g., UST System Summary Report Form or letter) in the field office file. The auditor will also enter information in the Memo Field of the UST database to note conversations, significant events, changes, etc. at a particular site. The field office will also enter any other site visits or activities into the UST inspection database.

- 13. Tracking Audits.** The UST Section will track which inspectors have been audited to ensure that each inspector is audited at least once a year. This information will be provided to the field offices monthly.
- 14. Compliance Inspector Performance and Discipline.** UST Section will track compliance inspector performance and initiate enforcement action and discipline in consultation with the field offices. Field office staff may also make recommendations for disciplinary actions.
- 15. Other Field Office Investigations and Site Visits.** The field office will conduct other UST investigations deemed necessary to ensure facility and inspector compliance. For example, any reports of leaks or releases at a facility will be followed up by a field office investigation to determine what additional steps must be taken. During investigations and follow up visits, field offices need only investigate the problem that was identified; it is not necessary to conduct a complete inspection. For example, if a release was identified, it would be important for the field office to identify the source of the release, if not already known, and whether monitoring wells or other sumps are affected. In many cases, the UST Section will initiate these investigations by informing the field office through a work request and/or phone call. The field office will enter its activities into the UST database.

## **Appendix F**

### **Flooded Underground Storage Tank (UST) Systems Policy and Procedure**

To: UST owners/operators  
Date: June 19, 2008  
Re: Flooded Underground Storage Tank (UST) Systems Policy and Procedure  
From: Elaine Douskey, UST Section Supervisor

Flooding and damage related to the recent rain events have raised many issues regarding Underground Storage Tank (UST) status. Damage to UST systems as well as remediation systems is expected. The impact of this damage must be evaluated to determine what steps are necessary to safely place these sites back into service without risk of a release. UST systems need to be evaluated to determine if there has been a release of product from the system and if so corrective action must be taken to assess the extent of the release.

Existing agency rules do not adequately address what actions must be taken to allow UST systems to be brought back into service as a result of impacts from a flood such as this. Therefore, the department is issuing this emergency policy in order to establish a policy and procedure for owners and operators to follow and document before they can bring their UST systems back into service.

This policy also describes the actions owners and operators must take to investigate whether there has been a suspected or actual release from their UST system, reporting requirements and corrective action that must be taken in response to a suspected or actual release.

As long as owners and operators comply with these policies, the department does not intend to take enforcement action for any actions or inaction which might otherwise be considered a violation of agency rules. These policies are expected to change as the conditions change and as the department develops experience in evaluating these situations. Therefore, you are encouraged to frequently check the department's website at <http://www.iowadnr.com/land/ust/index.html> or contact us at 515.281.8879 or 515.281.8779 for assistance.

The number of active UST sites submerged by floodwaters may number into the hundreds. This guidance requires UST inspections to be conducted by Iowa licensed installers, installation inspectors or compliance inspectors. The department recognizes that this may create delays in re-opening UST systems and alternatives may be approved depending on the demand for inspections and potential delays. The department also understands the cost involved in evaluating a site under these guidelines and we are exploring ways to assist you with the cost of the evaluation.

**APPLICABILITY:** This policy and procedure applies to all UST systems submerged by floodwaters or otherwise affected by flooding, such as saturation damage/exposure.

## **UST systems are affected by flooding in the following ways:**

- 1) The buoyancy of the tanks could offset the restraint of backfill and pavement over the tanks causing the UST system to move or shift in the backfill. Connections in the UST system could be loosened or broken. If the UST was not anchored, it may be pushed out of the tank pit and float. Contact Tom Collins at 515.281.8879 or Paul Nelson at 515.281.8779 to report a petroleum release, a floating tank or if you have any questions or concerns about the evaluation or problems scheduling someone to evaluate your system.
- 2) It is likely that water infiltrated the tank. When it does, it settles at the bottom of the tank and push out the product. If water found its way in, product can be forced out. However, if fill port caps, probe caps, vapor recovery port caps are tight and intact, flood waters do not reach the top of the vent line, and the tank is anchored, then little damage may result.
- 3) If the ports at the top of the tanks are not tight, the tank will fill with water and displace product.
- 4) Tanks that are not anchored or weighted down with fuel will float up destroying the overburden, product lines and vent lines and spill product. UST systems that suffer this type of damage will require replacement.
- 5) Submerged electrical power systems, such as pumps, turbines, dispensers, ATG consoles, emergency shutoff panel box, underground wiring can be damaged due to extended contact with water.
- 6) Above and below ground components of remediation systems will also be damaged by flood waters and may need either replacement or an extensive over hall. Groundwater professionals must carefully investigate and monitor systems that remain intact, but had submerged underground components.

### **UST SYSTEM EVALUATION**

Before flooded UST systems are returned to operation, they must be evaluated by an Iowa licensed installer to determine the extent of damage or whether they are suitable to receive product. The owner or operator must submit proof that the system has been inspected and certified as safe to return to operation. A list of Iowa licensed installers can be found at DNR's UST Section website: <http://www.iowadnr.com/land/ust/ustinstall.html>.

Owners and operators of submerged or flood damaged UST systems should immediately contact their financial responsibility or insurance provider and file a notice or claim. FEMA

The evaluation of UST status should begin as soon as conditions and officials allow flood area re-entry. This policy assumes that there is a reasonable likelihood that a release of product may have occurred if an UST system has been submerged or affected by flood waters. The following procedure is intended to, in part, comply with the "system check" requirements whenever there is a suspected release as provide in agency rule 567 Iowa Administrative Code 135.6. This policy further assumes that damage may have occurred such that inspection, product removal and repairs may be needed to be undertaken. All submerged and flood affected USTs must follow the proceeding evaluation before start up.

1. Measure for water in the tank bottoms with your ATG system or by using a gauge stick (capable of measuring the level of product to within 1/8 inch) and water finding paste. If you have over an inch of water you will need to remove it. No water is acceptable for tanks containing an ethanol blend as the water will be absorbed by the ethanol and create fuel quality problems. Contact a hazardous waste management company (see page 6 for a list) for more information about removing water/ethanol mix from ethanol blended tanks. Fuels sold in retail markets must meet strict ASTM standards; make sure your fuel quality is not compromised. Fine silts are present in flood waters and may contaminate the fuel. The fine silts will need to be removed if present. Fuels will have to be removed if the UST system is found to be damaged during the evaluation.
2. Before returning to operation, all flooded UST systems must conduct tank and line tightness testing (0.1 gph). Tightness testing may be conducted using an Automatic Tank Gauging (ATG) system or a third party tightness tester. Tanks with secondary containment (double wall) may use interstitial monitoring in lieu of tightness testing. Tanks with confirmed "Fail" results must be emptied.
3. If water entered interstitial spaces of tanks and product lines, they must be drained and flushed where possible. Tanks with brine, vacuum or interstitial sensors may be returned to service if the levels are normal.
4. Empty and clean all containment sumps, spill buckets and dispenser pans. If there is no petroleum sheen on the water, you should be able to empty it onto the concrete where it can evaporate. Water with a petroleum sheen or floating product in a containment sump must be investigated for a release. The water and petroleum must be removed and properly disposed by a hazardous waste management company (a list is provided with this guidance memo). Do not discharge contaminated water to a streets, storm sewers, ditches or sumps. Do not operate pumps and dispensers if they continue to fill with flood waters as there is chance water could enter the fueling system and damage components.
5. Submerged dispensers may have to be replaced or repaired if possible. Any submerged suction system will have damaged motors and pumps. Check hanging hardware for damage.
6. Check sump lid gaskets. After initial cleaning and drying make sure sumps, dispenser pans and spill buckets are liquid tight and prevent water ingress.
7. If you have more than one inch of water in a diesel or gasoline tank (non-ethanol blend), have it removed by a hazardous waste management company. More than an inch of water at the bottom of the tank can contaminate fuel systems in vehicles. Hazardous waste management companies can remove the water and leave the product in the tank.
8. Check the deflection of fiberglass tanks to make sure they meet the manufacturer's specification.
9. Determine whether the tank moved or shifted. If problems are found, repair according to manufacturer's instructions and appropriate industry standards and regulations. These tanks must not receive fuel until that are deemed safe and tight.
10. Check vents for movement, cracking, blockage and proper operation. This is a common area for water ingress and damage from flooding.
11. Check dispenser filters and submersible check-valve screens for plugging with dirt or mud.



12. Check critical safety devices (e.g., emergency power off controls, line leak detectors, air compressor pressure limiters, shear valves, stop switches, isolation relays on dispensers, etc.). Shear valves may be salvaged if they can be cleaned and lubricated with corrosion preventative. Some may still have to be replaced.
13. Sump sensors may need to be replaced after emergency conditions cease.
14. Submersible turbine pumps, ATG probes, overfill devices, ALLDs and all caps at the top of the tanks must be assessed for damage and replaced if necessary.
15. After flooding has abated, submerged CP systems must be assessed by a NACE or Steel Tank Institute certified cathodic protection professional. Submerged rectifiers may have to be replaced, if not submerged they must be checked for proper operation. Inspect CP wiring in saw cuts for damage and replacement if necessary.
16. Make sure the electrical system for the ATG, fueling and corrosion prevention systems are checked for shorts and continuity before restoring power.
17. All electrical junction boxes and conduit should be inspected for the presence of water and dried or vacuumed and for the presence of electrical shorts or opens. Open all dispenser panels to inspect and dry out.
18. Make sure tank management tags are present on the fill port. If missing contact the numbers listed in this guidance.

Facility Registration No.	Owner Name
Facility Name	Contact Name
Facility Phone	Street Address
City ZIP	UST insurance Provider
I, the undersigned, evaluated this facility according to DNR policy and procedures listed above.	
The UST system I evaluated is safe and suitable for start up <input type="checkbox"/> Yes <input type="checkbox"/> No	
The following components have been repaired/replaced or need to be repaired or replaced:	
<input type="checkbox"/> Installer <input type="checkbox"/> Installation Inspector <input type="checkbox"/> Compliance Inspector	
Please Print or Type Name	Signature

The following steps should be taken after your UST system is evaluated as safe and operational:

1. Check daily for the presence of water (with water finding paste) to ensure the system is tight. If these water checks indicate excessive water or you are showing loss of product on daily inventory, the tanks should be emptied of product and use of the tanks should discontinue. Such a condition must be reported to DNR (515.281.8879 or 515.281.8779) no later than 24 hours after discovery. See rule 567 IAC 135.6 .

2. Use daily inventory control and monthly reconciliation if your current electronic method of leak detection is not operating. Guidance books and log sheets for daily inventory control and monthly reconciliation are provided on EPA's website: <http://www.epa.gov/OUST/pubs/doing.htm>

## **SUSPECTED RELEASE OR CONFIRMED RELEASE**

1. Current agency rules require owners and operators to report a "suspected" or actual release within 6 hours if it constitutes a "hazardous condition" or within 24 hours if it does not. During the inspection, it may be evident that a release of fuel from the UST system has occurred. For example, you may observe a sheen on water or around the system, product levels may be below the levels gauged before flooding, leaks from dispenser connection, fuel in sump pits. You must notify the Department as soon as possible and within 24 hours if you have reason to believe a release may have occurred. You should also contact your UST insurance provider and file a claim.
2. Rule 135.6(3) requires a system check within 7 days of discovery. The Department intends to use its enforcement discretion by allowing owners and operators more time to complete this investigation, but you must notify us and propose a plan of action. You should make arrangements to immediately empty the tanks if a full investigation cannot be completed within 7 days.

## **CERTIFICATION OF UST SYSTEM INSPECTION AND REPAIRS**

1. Owners and operators must submit written documentation that the UST system has been inspected as provided above and the results of any inspection and repairs that have been made. The inspector must certify that the system meets current structural and operational requirements under Department rules.
2. Owners and operators should contact their insurance provider and in many cases the insurance provider may require and possibly pay for a system inspection in order to allow re-activation and continued coverage. If so, please submit the results of any insurance provider inspections. Owners and operators are encouraged to obtain a "binder" or other written certification from the provider that confirms that your pre-activation inspections satisfies their standards and that continuing coverage will not be denied solely on the basis of your re-activation of the UST system. You may want to seek the advice of an attorney before bringing your system into operation.

## List of Known Iowa Hazardous Waste Management Companies in Alphabetical Order:

Acterra Group  
Corporate Center 200  
200 35<sup>th</sup> Street  
Marion, IA  
319.377.6357

Enviromark  
7301 Vine Street Court  
Davenport IA 52806  
563.388.9100

Environmental Management Services, Inc.(EMS)  
1030 South Rolff Street  
Davenport, IA  
800.457.1042

Global Filter, LLC  
7201 Mount Vernon Road S.E.  
Cedar Rapids, Iowa 52403  
319.743.0110

Hazardous Waste Management  
Box 159  
Waukee IA 50263  
515.986.4800

Hydro-Klean Environmental Services  
333 NW 49<sup>th</sup> Place  
Des Moines, IA 50313  
515.283.0500

Seneca  
4140 E 14th Street  
Des Moines IA 50313  
515.262.5000  
Or  
17851 244<sup>th</sup> Avenue  
Bettendorf, IA 52722  
563.332.8000

Unified Contracting Services  
2425 NE 46<sup>th</sup> Street  
Des Moines IA 50317  
515.266.5700



**Appendix G**  
**IOWA DEPARTMENT OF NATURAL RESOURCES**  
**UNDERGROUND STORAGE TANK SECTION**

**Installer/installation Inspector Checklist**  
**FOR INSTALLATION, REPLACEMENT, UPGRADE, RETROFIT, REPAIR**

The Iowa DNR Underground Storage Tank (UST) program requires this form to be signed and submitted to the DNR by the UST Licensed Professional after completing an installation inspection, a replacement, repair, retrofit or upgrade to an UST system. If an installation inspection is conducted, this form is completed by the installation inspector and is due 14 days after the final inspection. If an installation inspection is not required, the UST licensed professional completes and signs this form, attaches it to the 148 form along with manufacturer's checklists (if appropriate) and sends all forms to the DNR UST Section. The form is used for compliance with Technical Standards and Corrective Action for Owners and Operators of Underground Storage Tanks [567--135 IAC].

Facility ID (not available if new facility):

Facility

Name:

Facility Street Address:

Facility City, State and Zip:

Facility County:

Owner of Facility:

Owner Street Address:

Owner City, State and Zip:

Owner Phone:

Facility Contact Person:

Contact Phone:

Your Name:

I am an Iowa Licensed (check all that apply):

☐ Installer

☐ Installation Inspector

☐ Tank and/or Piping Tester

☐ Tank Liner

Cathodic Protection:

☐ Tester

☐ Technician

☐ Technologist

☐ Specialist

NACE Certification #:

Iowa License #:

Expiration Date:

Company Name:

Company Street Address:

Company City, State and Zip:


Company Phone:

E-mail:

**CHECK ALL THAT APPLY:**

New UST installation (at a new facility) <input type="checkbox"/>	Number of USTs: <input type="text"/>	
Tank replacement/addition (at existing facility) <input type="checkbox"/>	Number of USTs: <input type="text"/>	
Piping replacement (10 feet of piping or within 10 feet of a dispenser, secondary containment and double walled piping required). Secondary containment and double walled piping installed? <input type="checkbox"/>		<input type="checkbox"/>
Dispenser replacement (secondary containment required if piping replaced below the shear valve or check valve or if piping replaced within ten feet of dispenser) Dispenser pan installed? <input type="checkbox"/>		<input type="checkbox"/>
Tank top containment sump (submersible turbine) New Install <input type="checkbox"/> Replacement <input type="checkbox"/>		<input type="checkbox"/>
ATG system: Installation <input type="checkbox"/> Replacement <input type="checkbox"/>		<input type="checkbox"/>
Impressed current cathodic protection system install: New Install <input type="checkbox"/> Repair <input type="checkbox"/>		<input type="checkbox"/>
Replacement anodes install		<input type="checkbox"/>
Lining: Installation <input type="checkbox"/> or Repair <input type="checkbox"/>		<input type="checkbox"/>
Spill protection equipment replacement		<input type="checkbox"/>
Overfill prevention equipment replacement (Warning: do not install vent restriction devices on suction systems, systems with Stage 1 vapor recovery, remote-filled tanks, emergency generator or heating oil tanks):		<input type="checkbox"/>
UST system repair (summarize work to be done):		<input type="checkbox"/>

**FIRST INSPECTION**

<b>PRIOR TO PLACEMENT OF THE UST INTO THE EXCAVATION</b>	YES	NO	UNKNOWN	N/A
The UST installer is licensed by the IDNR?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. The UST installer submitted the IDNR Notification of Installation form prior to installation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was hydrocarbon contamination observed in the excavation? If so was it reported to IDNR?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
3. Surface depth to groundwater	_____ Ft.		<input type="checkbox"/>	
4. Tank and piping materials meet current and acceptable standards and comply with 567—Chapter 135?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Manufacturer's specifications for pre-installation followed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Visual damage inspection conducted for tanks and piping?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If damage(s) discovered--repaired per manufacturer's instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Pressure test conducted on tank according to PEI RP 100-05 or API 1615? All surfaces, seams and fittings soaped and inspected?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
9. Interstitial test conducted and passed? a. Liquid filled (tested per manufacturer's instructions)? b. Vacuum (tested per manufacturer's instructions)?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10. Tank excavation complies with API 1615 or PEI 100-2005?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Tank Manufacturer / Model / UL				

Installation Inspector's Name (Print):

1<sup>st</sup> Inspection

Date:

Installation Inspector's Signature:

<b>SECOND INSPECTION</b>	<b>TANK #1</b>			<b>TANK #2</b>			<b>TANK #3</b>		
<b>AFTER PLACEMENT OF USTS AND PIPING, BUT PRIOR TO BACKFILLING</b>	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
11. Tank placement conducted according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Was tank damaged prior to or during placement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tank pit and piping trenches sufficiently wide and deep to accommodate backfill material and clearances according to PEI/RP 100-2005?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Type of anchorage used for tanks:	<input type="checkbox"/> Slab at Grade			<input type="checkbox"/> Deadmen Anchors			<input type="checkbox"/> Bottom Hold-Down Pad		
15. Tanks are anchored according to manufacturer's standards or PEI or RP100-2000?	<input type="checkbox"/> YES			<input type="checkbox"/> NO			<input type="checkbox"/> N/A		

<b>PIPING</b>	<b>TANK #1</b>			<b>TANK #2</b>			<b>TANK #3</b>		
	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
16. All piping slopes back to the tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Piping joints have been assembled according to the pipe and sealant manufacturer's preparation, application and assembly instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. All piping installation requirements specified by the manufacturer have been followed and implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Soap and mirror test conducted on all assembled piping joints, connections and flex connectors under pressure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were there any leaks/evidence of leaks in the assembled piping from the soap/mirror test?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If primary or secondary piping was damaged or failed the pressure test, it was repaired according to manufacturer's instruction, retested and passed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Primary piping passes pressure testing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Secondary piping passes pressure testing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Sump penetrations are tight and sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Conduit junction boxes and penetrations into the sumps are tight and sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Sumps and UDCs hydrostatically tested and passed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Satellite-dispenser piping installed and monitored for leaks with a line leak detector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. All flex connectors properly installed, i.e., not kinked, twisted or bent out of its plane or beyond manufacturer's specifications:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b><u>SACRIFICIAL ANODE SYSTEMS</u></b>	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
29. Did anodes, dielectric bushings, or coatings incur any damage during installation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Damages to anode connection, coatings or tanks have been repaired according to manufacturer instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Anodes prepared and installed according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Testing was conducted to ensure the structures are adequately protected by the sacrificial system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Structures passed NACE criterion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. A cathodic protection test station was installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Identify tank using tag number, capacity, and content:</b>	<b>Tag #:</b>								
	<b>Capacity:</b>								
	<b>Content:</b>								
<b><u>IMPRESSED CURRENT SYSTEMS</u></b>	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
35. The impressed current cathodic protection system was designed by a corrosion expert?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. A pre-installation investigation was conducted (utilities contacted) to confirm there would be no interference from other DC sources.	YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>								
37. Anodes were installed according to the manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. The negative terminal on the rectifier has been connected to the structure, and the positive terminal to the anodes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. All cathodically protected structures are electrically connected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Testing was conducted to ensure the cathodically protected structures are not shorted or connected to other unintended metallic structures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Impressed current system was tested and passed according to NACE standards and found to be providing adequate protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Damage(s) to anode connections, coatings or tanks have been repaired according manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Any anode pre-packaging material has been removed, and the anodes placed in the proper backfill material?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. A cathodic protection test station was installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. A rectifier monitoring log has been prepared for the owner/operator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Installation Inspector's Name (Print):

2nd Inspection

Date:

Installation Inspector's Signature:

<b>THIRD INSPECTION</b>	<b>TANK #1</b>			<b>TANK #2</b>			<b>TANK #3</b>		
<b>AFTER BACKFILLING AND PRIOR TO OPERATION</b>	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
46. Backfilling materials comply with manufacturer's recommendations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Backfilling materials compacted according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. All UST system components are compatible with the product stored?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Spill protection devices have been properly installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Adequate clearance has been provided between piping and trench walls, conduit, monitoring wells, utilities, nearby structures, and other system components following NFPA, API or PEI standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Both overfill protection and leak detection monitoring system requirements of 567—135 have been met and are operating properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Emergency shut-off valve with fusible is positioned and anchored according to manufacturer's specification?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Emergency breakaways are installed on Class I liquid hose?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Vent pipes for Class I products terminate 12 feet above grade?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Vent pipes for Class II products terminate at a minimum 4 feet above grade and higher than the fill pipe opening?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Dispensers are mounted and bolted down properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Tank deflection measurements for FRP tanks have been re-measured at this point and remain within the acceptable limits of the manufacturer's specifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Leak detection monitoring systems are operational and appropriate for the site? Note: if this is a high throughput facility, such as truck stop, make sure the leak detection system is evaluated and appropriate for the monthly maximum volume of throughput.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Unattended fueling—ELLD capable of positive shut down of STP when a leak is detected (for pressurized delivery)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. Installation inspection was photographed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. Installation inspection was videotaped?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Manufacturer's Checklist is completed and signed by installer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Installation Inspector's Name (Print):

3rd Inspection

Date:

Installation Inspector's Signature:

Check the category below for the gasoline dispensing facility (GDF) you are installing and make sure the appropriate equipment is installed according to the expected or measured monthly throughput.

**National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements for Source Categories *(check all that apply)***

Select one of the three source categories:	YES	NO	NA
1. Facility's estimated monthly throughput for gasoline is less than 10,000 gallons			
2. Facility's estimated monthly throughput for gasoline is 10,000 gallons or more, but less than 100,000 gallons			
a. Drop tube installed within 6 inches of tank bottom for submerged filling			
b. Vent pipes $\geq$ 12 feet above grade			
3. Facility's estimated monthly throughput for gasoline is 100,000 gallons or more			
a. Dual Point vapor balance system installed with spill buckets and swivel adaptors OR			
b. Single point (coaxial) vapor control system installed with spill bucket and swivel adaptor			
c. Manifolded vapor recovery system (single vapor hose) installed			
d. Drop tube installed within 6 inches of tank bottom for submerged filling			
e. Vapor-tight caps installed for liquid fill connections			
f. Vent pipes $\geq$ 12 feet above grade			
g. Pressure/vacuum vent valves installed on each vent pipe at specified setting OR			
h. Pressure/vacuum vent valves present on manifolded vent pipes at specified setting			
i. Pressure/vacuum vent valves tested and passed			
j. Static pressure test (decay) performed on vapor balance system and passes			
k. Stage 1 Vapor System is vapor tight			
If this is an installation inspection for a retrofit (on a new or existing UST system), complete the following:			
UST system was installed before November 9, 2006			
UST system was installed after November 9, 2006			

**INSTALLATION INSPECTOR'S COMMENTS**

INSTALLATION INSPECTOR'S NAME:

**Installation of Vapor Control Equipment  
At New and Existing Gasoline Dispensing Facilities  
National Emission Standards for Hazardous Air Pollutants (NESHAP) 40  
Code of Federal Regulations (CFR) Part 63, Subpart CCCCCC**

Gasoline dispensing facilities (GDFs) are now required to control gasoline vapors based on the monthly throughput of the facility (gallons per month or gpm). There are three source categories of GDFs: less than 10,000 gpm (small), equal to or greater than 10,000 gpm (medium) and equal to or greater than 100,000 gpm (large). Source categories are determined by a 30-day rolling average throughput. If at any point throughput exceeds medium or large source categories, GDFs must comply with the requirements for those categories. It is incumbent upon lowa-licensed Installers and installation inspectors to help their clients understand the NESHAP requirements as new UST systems are installed and existing systems are retrofitted.

Complete Stage 1 vapor recovery systems are required on all new GDFs (installed after November 9, 2006) that meet or exceed the large GDF category. Dual point systems are required on GDFs installed after January 10, 2008. The deadline for installation of vapor recovery systems for new GDFs is September 23, 2008. That means any large, medium or small source facility built after November 9, 2006 must comply with the specific requirements by September 23, 2008. Any proposed large source GDF must have complete Stage 1 Vapor Recovery system (dual point) ready to go at start up. Existing GDFs (constructed on or before November 9, 2006) that meet or exceed the large source category are required to have Stage 1 vapor recovery by January 10, 2011.

Stage 1 Vapor Recovery returns the gasoline vapors emitted during the transfer of gasoline to the UST back to the transport truck instead of forcing the vapors out through the vent pipe. Gasoline vapors contain benzene and volatile organic compounds (VOCs), which are harmful to the atmosphere and to human health. Depending on the technology that exists at the terminal or bulk plant, vapors captured during product transfer can be processed by condensation, absorption or incineration.

There are three types of Stage 1 Vapor Recovery: dual point, single point (coaxial), and manifolded. Dual point systems consist of two separate tank risers, one for delivery of the product and the other for the release of vapors. Both fill and vapor risers must be fitted with poppeted vapor swivel adaptors. Coaxial or single point systems have only one tank opening with concentric tubing, which allows for delivery through the inner drop tube and vapor recovery through the outer tube. A manifolded vapor control system allows for one vapor hose connection for all the tanks at a facility.

The coaxial vapor control is less expensive when retrofitting existing large source GDFs than installing dual point control, but coaxial transfers of product take longer. Eventually, within just a

few years delivery costs can exceed the cost installing a two point system. Further, coaxial controls may not remain vapor and liquid tight over extended periods of use due to repeated torque force on the swivel adaptor. EPA strongly discourages the use of coaxial systems because of these problems.

Pressure vacuum relief vent valves complete the Stage 1 Vapor Recovery System. Vent valves must be installed on vent pipes (manifolded or separate) to prevent gasoline vapors from escaping to the atmosphere and prevent excessive positive or negative pressure in the tank.

**Testing Stage 1 Vapor Recovery Systems:**

The pressure decay test is a low-pressure testing method that tests the entire Stage 1 vapor control system, including the tank risers, the tank, piping, vent lines and pressure/vacuum vent valves. Testing is conducted after backfilling or just before the vapor control system is put into operation. Test equipment must be third party evaluated. Testing is required on start up and every three years on Stage 1 vapor control systems. Owners and operators must maintain initial test results and every three year pressure test results. Records must be maintained for five years.

See PEI's Recommended Practices for Installation and Testing of Vapor Recovery Systems at Vehicle-Fueling Sites (PEI RP 300) for more installation and testing information. To view the options available to GDFs in summary form go to <http://www.epa.gov/ttn/atw/area/gdfb.pdf>. To view the federal final rule for bulk terminals, bulk plants and GDFs go to <http://www.epa.gov/ttn/atw/area/fr10ja08.pdf>. To view Iowa DNR's proposed Air Quality rule revisions go to <http://www.iowadnr.gov/epc/08aug/18.pdf>. Contact Diane Brockshus (515.281.4801, e-mail: [diane.brockshus@dnr.iowa.gov](mailto:diane.brockshus@dnr.iowa.gov)) with DNR's Air Quality Bureau for more information about NESHAP compliance.

*(Installation Inspection Checklist 9.8.08)*

Appendix H  
**DEPARTMENT OF NATURAL RESOURCES**  
**Environmental Services Division**  
**Land Quality**

**EXPEDITED ENFORCEMENT REFERRAL**

DATE: November 14, 2008  
TO: Ed Tormey, Chief, Legal Services  
Dave Sheridan, Attorney General's Office  
Barbara Lynch, Chief, Field Services  
Jim Stricker, Enforcement Coordinator  
FROM: Tom Collins, Elaine Douskey

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**INTRODUCTION:**

The UST enforcement priorities guidance authorizes the Department to initiate "expedited enforcement" methods in which a standardized short form consent order is used. Previously, Jim Stricker, Ed Tormey, Barb Lynch and David Sheridan were provide a memo explaining the reason for initiating an expedited enforcement method to address multiple sites which had not completed a facility third party inspection by December 31, 2007 as required by rule. This process has generally been approved by Jim Stricker, Elaine Douskey, Barb Lynch and the Legal section.

We have identified the following 14 sites which have not completed the inspection. We have contacted each of the sites to confirm that they are in operation and have not completed the inspection. We intend to supplement this list as we identify and confirm other active sites without having to route a separate referral for each of the sites.

Legal will review the compliance history of each site and, if circumstances warrant, may seek a referral to the Attorney General's office. However, at this time, none of the owners/operators listed have any UST-related enforcement history.

**TYPE OF VIOLATION:**

Failure to contract for a third party inspection by December 31 2007 [567—135.20].

**FACILITY DESCRIPTION:**

The above list contains Underground Storage Tank facilities which we have confirmed are currently in operation without having completed a compliance inspection. Our intention is to first target enforcement on active UST sites and then begin to work on sites that are in temporary closure. The rules require third party compliance inspections on those sites as well.

**ALLEGED RULE VIOLATIONS:**

567—135.20 455B

**CHRONOLOGY:**

January 9, 2007: Memo from Elaine Douskey, UST Section supervisor was sent to all UST owners listed in the Department's database explaining compliance inspection requirements, including initial inspection requirement by December 31, 2008.

October 17, 2007: second memo from Elaine Douskey was sent to all UST owners on the database informing those who had not completed a compliance inspection to have it completed by December 31, 2007.

November 5, 2007: a list of un-inspected sites was posted on web page for compliance inspectors to contact.

June 10, 2008: Notice of Violation letter sent to each facility for which the Department had not received documentation that a compliance inspection was completed or scheduled. If the facility address and owner address listed in the Department's database were different, letters were sent to each address. Owners were required to submit the compliance inspection report by July 11, 2008.

**PAST ENFORCEMENT HISTORY:**

[REDACTED]

**FACILITY/INDIVIDUAL'S POSITION: (If any)**

All owners/operators have been given several notices of the inspection requirement as described above.

**CONFIDENTIAL****PENALTY RECOMMENDATION:**

[REDACTED]

**RECOMMENDED CORRECTIVE ACTION:**

An initial compliance inspection is required is to be conducted no later than November 30, 2008. The terms of the consent order require proof of a contract and schedule for the inspection within 10 days of receipt of the order. The compliance inspector must contact the department, UST Section, as soon as the inspection is scheduled. If the inspection is not conducted by November 30, 2008, the Department will exercise the option of issuing another AO with penalties for failure to comply or refer the matter to the Attorney General for failure to comply with the

order.

**Appendix I**  
**Iowa UST Compliance Inspector Course Outline**  
**August 5-6, 2008**

➤ **8:00 – 8:30 INTRODUCTIONS AND OVERVIEW**

➤ **8:30 – 9:15 2007 COMPLIANCE INSPECTIONS PROGRESS REPORT**  
*What have we learned from your inspections; and where do we go from here?*

➤ **9:15 – 9:45 INSPECTION DATABASE**  
*Where we are now and what we hope will happen soon.*

**9:45 – 10:00 Break**

➤ **10:00 – 11:00 UST SYSTEM INSPECTION SAFETY**  
*Staying Alive--Review of Inspection Safety Issues*

➤ **11:00 – 12:00 UST SYSTEM INSPECTIONS AND COMPLIANCE**  
*Paperwork Inspection Protocol—What's the best way to look at paperwork?*  
*Hardware Inspection Protocol—What to look for during the inspection.*

**12:00 – 1:00 LUNCH**

➤ **1:00 – 1:30 Exam Preview**

➤ **1:30 – 2:15 LEAKS, RELEASES, SUSPECTED RELEASES, SPILLS (greater and less than 25 gallons, aboveground and belowground), and HAZARDOUS CONDITIONS**  
*What's the difference?*

**2:15 – 2:30 Break**

➤ **2:30 – 4:30 TANK LEAK DETECTION METHODS**

**Wednesday, August 6**

➤ **8:00 – 9:00 PIPING LEAK DETECTION METHODS**  
*Topics:*

➤ **9:00 – 9:45 LEAK DETECTION SPECIAL ISSUES**  
*Topics:*

**9:45 – 10:00 Break**

➤ **10:00 – 11:00 PAPERWORK INSPECTION PROTOCOL**

➤ **11:00 – 12:00 CATHODIC PROTECTION**

➤ **1:00 – 2:30 EXAM PREPARATION**

➤ **2:30 – 4:30 CERTIFICATION EXAM**

**Appendix J**  
**UST Refresher Course Agenda**  
**August 7 or August 8, 2008**

- **8:00 – 8:15 ENERGY POLICY ACT IMPLEMENTATION AND OTHER UST NOTES**  
*Third Party Inspections, Secondary Containment, Delivery Prohibition, Owner/Operator Training*
- **8:15 – 8:30 NEW RULES**  
*Installers, Installation Inspectors, Removers, Testers, Liners*
- **8:30 – 8:45 IPECA WORKS FOR YOU [Terry Cooper]**  
*Meetings, News and Upcoming Events*
- **8:45 – 9:00 UL TESTING OF E-85 DISPENSERS [Terry Cooper]**  
*Will it ever end?*
- **9:00 – 9:30 WHAT'S NEW FOR 2008 [Marcel Moreau]**  
*API and PEI Installation Standards*
- 9:30 – 9:45 Break**
- **9:45 – 11:00 PLAYING IT SAFE IN 2008**  
*Review of safety issues for UST workers*
- **11:00 – 12:00 TESTING AND TROUBLESHOOTING GALVANIC CP SYSTEMS**  
*Making the right measurements and the role of continuity testing*
- 12:00 – 1:00 Lunch**
- **1:00 – 2:15 OVERFILL PREVENTION**  
*Factors to consider when selecting overfill prevention devices*
- 2:15 – 2:30 Break**
- **2:30 – 3:00 DOCUMENTING LINE TIGHTNESS TESTS AND FUNCTION TESTS FOR LLDs**
- **3:00 – 4:00 “MY INVENTORY RECORDS AREN’T COMING OUT CORRECTLY.”**  
*How to figure out what’s wrong with a tank system by looking at inventory records*
- **4:00 – 4:30 STAGE 1 VAPOR RECOVERY**